Parisharam (2024)

Relations and Functions

DPP-06

1. The domain of the function $f(x)=\frac{1}{\sqrt{|x|-x}}$

(1) $[0,\infty]$ (2) $[-\infty,0]$

(3) $[1,\infty]$ (4) $[-\infty,0]$

2. Which one of the following function f: $R \to R$ is injective?

(1) $f(x)=|x|, x\in R$

(2) $f(x)=-x, x\in R$

(3) $f(x)=-x^2, x\in R$

(4) $f(x)=c, x\in R$

3. If $f(x)=\frac{4x+x^4}{1+4x^2}$ and $g(x)=\log\left(\frac{1+x}{1-x}\right)$ then what is the value of $fog\left(\frac{e-1}{e+1}\right)$ equal to

(1) 2 (2) 1

(3) 0 (4) 1/2

4. If $f:\left[-\frac{\pi}{2},\frac{\pi}{2}\right]\to[-1,1]$ and $f(x) = \sin x$ then

(1) one-one and onto

(2) one-one and into

(3) many-one and into

(4) many-one and onto

5. Let $f: R \to R$ be defined by $f(x) = \sin x$, and $g: R \to R$ be defined by $g(x) = x^2$. Find $(f \circ g)(x)$.

(1) $x^2 \sin x$ (2) $x \sin^2$

(3) $\sin x^2$ (4) $2x \sin x$

6. If $f(x)=\frac{1-x}{1+x}$, then $f^{-1}(x)=?$

(1) $\frac{1-x}{1+x}$ (2) $\frac{1+x}{1-x}$

(3) $\frac{1}{1+x^2}$ (4) x

7. The inverse function f^{-1} exists only, if f is

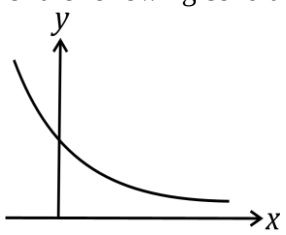
(1) one-one function

(2) many-one into function

(3) one-one onto function

(4) None of these

8. The above curve shows the graph of a^x under which one of the following condition



(1) $a \geq 1$ (2) $a > 1$

(3) $0 < a \leq 1$ (4) $0 < a < 1$

9. Let $f(x)=\frac{ax+b}{cx+d}$. Then, $fof(x) = x$ provided that

(1) $d = -a$ (2) $d = 0$

(3) $a = b = c = d = 1$ (4) $a = b = 1$

10. If $X = \{4, 5, 6\}$ and $Y = \{0, 1\}$ and $f: X \to Y$ defined by $f = \{(4, 1), (5, 1), (6, 0)\}$, then f is

(1) one-one, into (2) one-one, onto

(3) many-one, into (4) many-one, onto

11. The number of injective functions from $\{1, 2, 3\} \to \{1, 2, 3, 4, 5\}$ is

(1) 125 (2) 243

(3) 10 (4) 60

12. The function $f(x)=\log(x+\sqrt{x^2+1})$ is

(1) An even function

(2) Periodic function

(3) An odd function

(4) None of these

Note: Kindly find the Video Solution of DPPs Questions in the DPPs Section.

Answer Key

1.	**(2)**	**7.**	**(3)**
2.	**(2)**	**8.**	**(4)**
3.	**(2)**	**9.**	**(1)**
4.	**(1)**	**10.**	**(4)**
5.	**(3)**	**11.**	**(4)**
6.	**(1)**	**12.**	**(3)**